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| 10/653,335      | 09/02/2003  | Donaldson J. Emch    | 1489P4              | 2935             |

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PPG INDUSTRIES, INC.  
Intellectual Property Department  
One PPG Place  
Pittsburgh, PA 15272

EXAMINER

PADGETT, MARIANNE L

|            |              |
|------------|--------------|
| - ART UNIT | PAPER NUMBER |
|------------|--------------|

1762

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

|                                      |   |
|--------------------------------------|---|
| Application No.<br><u>10/653,335</u> | Applicant(s)<br><u>Donaldson J. Erich</u> |
| Examiner<br><u>M.L. Padgett</u>      | Group Art Unit<br><u>1762</u>             |

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☒ Responsive to communication(s) filed on 1/13/04
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-36 is/are pending in the application.
- Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-36 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some\* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) (1/13/04)
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

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1) The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2) Claims 1-36 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-36 of copending Application No. 10/294,954. Although the conflicting claims are not identical, they are not patentably distinct from each other because they differ in the independent claims only by the extent of the range of power density claimed, where the (954) case totally overlaps this case, hence constitutes obvious variations, such as due to routine optimization. Most of the dependent claims are identical, while ones such as 10, 14, 17, 20, 23, 25 and 35-36 again have overlapping, but slightly varying ranges for parameters used in the process, with this claim 17 also specifying power density according to the part of the autobody treated, but as both cases are directed to autobody parts (claim 13), optimizing for particular parts with different constructions and uses, hence different needs, would have been an obvious variation to one of ordinary skill in the art, depending on materials employed as coatings in different locations, amounts used and how the part effects air flow and IR distribution.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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3) Claims 33-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 6-31 are of U.S. Patent No. 6,579,575 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because while the claims of the grandparent case (575) have different end points on claimed parameters, the ranges overlap where claimed, and the broader claims that do not specify certain parameters, encompass the specific ones of the grand parent and the "comprising" means that other steps may also be done. Also, while order of claiming some limitations differ, the requirement of a waterborne base coat of this case is consistent with the "liquid" of the grandparent, which also may use water (claim 4 of 575). The generic substrate of the present case is inclusive of the variously claimed metal or plasma substrates of the parent, which are obvious as typical categories of substrates that need such coatings. Claim 33 also differs from the parent case's claims, by requiring that the two IR + airstream treatments be alone in the same location, after transport from the coating location, however as both steps (b) and (c) may use the same devices, with only possible variations in parameters (not even necessary, except in claim 35 where the air speed's ranges do not overlap between this case's steps), it would have been obvious to one of ordinary skill in the art to employ the same location in the apparatus to perform both IR/air stream steps of the parent case, because this would required less room and expense (no need to by 2 apparatus), especially as the short drying times would imply that these drying steps are not a bottle neck.

4) Claims 33-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 8-20 and 23 are of U.S. Patent No. 6,291,027 B1. Although the conflicting claims are not identical, they are not patentably distinct

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from each other because as above while the claims are not identical, there is significant overlap in claimed ranges, such as power density, times, velocities, and air temperature for the both IR/air steps. Note above arguments concerning broader claims or substrate choice or location of step, etc., again apply.

5) Claims 33-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4-13 of U.S. Patent No. 6,113,764.

Although the conflicting claims are not identical, they are not patentably distinct from each other because as above while the claims list limitations in different orders and varying parameter ranges, such as power density, time and air temperature have significant overlap, hence constitute obvious variations. The (764) case also claims that their liquid coating that may comprise water is an electro deposited one, however this more specific coating type is considered to be encompassed by the broader limitation of the present invention that requires the above arguments concerning broader claims or substrate material or location of performing steps, etc, again apply.

5) Claims 12-13, 17 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Markush group of claim 12 is improper since "iron" (Fe) is not materially distinct species from "steel" which is an alloy of it and also covered by the "and alloys..." at the end of the list species.

In claim 26, line 4, when the claimed "...period of at least six minutes" applies is ambiguous, because as phrased it could start from when the "hot air" is first applied, or only after

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it has achieved the claim "peak metal temperature of 110-150°C", which could potentially be very different time period, hence clarification is needed.

In claim 17, "upto 30.0KW/m<sup>2</sup>" for the option of body panels, presumably as the substrate, although such is not positively claimed, expands the range of power densities that may be applied to include down to zero. Also, use of relative terms, that lack clear metes and bounds in the claims, or in a definition provided in the specification, or in cited relevant prior art, is vague and indefinite. Furthermore, what is a "rocker area" with respect to automotive body part?

6) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7) Claims 1, 8-25 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Jan 15, 1995 "Specification for Heated Flash OFF for Water-Borne Base coat Application".

The title of this reference and the first paragraph of its "scope" indicate a process used for applying claimed base coat materials to paint automotive body parts, where the phrasing "heated flash off" implies a drying process but never actually states that drying of the waterborne base coat is effected or when it might occur in the process.

The Flash-off specification describes a hybrid IR/convection heated flash system where a sequence of zones are employed, providing in order: (1) a spray booth for application; (2) a 5 foot buffer zone, with 100 ft/min (0.5m/sec) air draft velocity; (3) a one minute quiet zone with minimal air movement; (4) a one minute IR zone, with low velocity air (~9000 scfm ~4.8m<sup>3</sup>/sec)

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at 100-180°F (38-82°C), using medium wavelength emitters (2-4 microns), where the power density of the emitters is given to be 15-50 W/in<sup>2</sup>, which is 20-77 KW/m<sup>2</sup>; (5) two minute convection area to recirculate heated air at temperatures of 120-180°F (49-82°C) to the surface of the vehicle with air velocity of 400-600 FPM (feet/min), so about 2.0-3.1 m/sec, with different “flash conditions” set for the paint (metallics or solid colors) being treated; (6) a one minute cool down zone; and (7) a 5ft buffer exit zone. See p.2-3 for generalized description and pages 5-6 for outline of parameters. The section on p.4 discussing IR also mentions providing different settings within the general teachings to accommodate the requirements of specific paints, as well as to accommodate different styles or repair options. While the flash off specification does not state when the waterborne base coat is dried, it would have been obvious to one of ordinary skill from the context of this reference, that the purpose of the described procedure is to dry the base coat, as “flash off” implies removal of water from the paint coating, hence one of ordinary skill would have optimized the above procedure for the particular paint and autobody part in order for it to be dried in the space and time allotted as is generally suggested by the context. While specific parameters, such as peak substrate temperatures, and rates of temperature increase or heating are not discussed, it would have been obvious that given the like processing times, air flow and temperatures, as well as like IR power input and wavelengths, that the same range of resultant heating effects would occur in the analogous sequential process. Also, while the “Heated Flash Off” reference does not discuss autobody parts being metal, it is old and well known that such parts are commonly made of metals, such as steel, hence such metals as substrates are implied by the disclosure.

While distinct zones for each step to occur are discussed, the IR with airflow and convection zones have overlapping needs, and time performs the effect of buffer zones, hence batch semi-batch or continuous would have been obvious to employing depending on the quantity of automotive parts to be so treated, where large quantities at the manufactures would motivate continuous, but only needing to paint smaller quantities for repair at a body shop would motivate semi-batch or batch due to the limited space usually available for a process that would not need to run continually.

8) Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over “Specification for Heated Flash Off...” as applied to claims 1, 8-25 and 30-32 above, and further in view of Thiele et al or Rekowski et al (4,988,537) or Tanimoto et al (6,280,800 B1).

The primary reference does not discuss other coating that may be deposited on the basecoat on the automobile part, such as the claimed top coat of powder or liquid composition, however multilayer coating, such as basecoat/clear top coat, deposited via either liquid or powder coating means are well known in the art, including where the basecoat is dried and/or cured using IR before the deposition of the top coat, as is disclosed in Thiele et al (6,280,800 B1: abstract; col. 1, lines 5-7 and 60-64; col. 2, lines 1-29 and 50-col. 3, lines 10 and esp. 24-50 for multilayer, water-dilutable, use in the car industry, Flash Off and NIR, and line 5 for spraying); or Rekowski et al (6,432,490 B1: abstract; col. 1, lines 4-8; col. 2, lines 25-53; col. 3, lines 41-55; col. 4, line 9-24; col. 5, lines 9-11 and 51 – col. 7, line 29, esp. col. 6, line 33-44 and 59-68; noting teachings of spray deposit (col. 5) and water based or aqueous mixtures (col. 3, 4)).

It would have been obvious to one of ordinary skill in the art to employ the process as described in the “Heat Flash Off...” reference in the over all sequence of coating automotive



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parts as described by Thiele et al or Rekowski et al, because they show the desirability of other claimed coating, and teach deposition, drying and /or cure sequences on automotive substrates consistent with the primary reference, since spraying and IR of like wavelength are employed in all references.

Tanimoto et al (4,988,537) who also teach coating, drying, curing steps inclusive of those for automobiles, also disclose a range of types of paints that are applicable to their analogous drying/curing operations inclusive of powder paints. See abstract; figures; col. 6, lines 35-68+, this latter is where types of paints including thermosetting, powder paints and those that are diluted, etc., are disclosed as well as metallic based coats and metallic clear coats, etc.; and col. 7, lines 19-41, is where spraying of the various compositions disclosed. Claims 3-12, particularly 6 and 8 of Tanimoto et al discuss heating techniques for these types of paints including IR and hot air, while claim 28 specifies powder coats that are baked, therefore it would have been obvious to one of ordinary skill in the art to use the detailed procedure of the primary reference for paints of phases such a powders, slurries, etc., for multiple layers when they are shown to need the same general type of sequence of heat treatments. Note that Tanimoto's discussion of rotating to prevent sagging, etc., is consistent with heating /curing procedure, as they are for analogous purposes of coating automobiles and will not conflict with each other, and arguments of obviousness made above also are applicable to Tanimoto et al.

9) Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over "specification for Heated Flash Off..." as applied to claims 1, 8-25 and 30-32 above, and further in view of Poole et al (5,401,790).

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The primary reference does not discuss any particular waterborne basecoat composition, hence no percentage by weight of the solid contents of the sprayed coating, however Poole et al (abstract: col. 1, lines 6-30; col. 6, lines 1-15 and 23-54), who applies analogous waterborne basecoats to be applied to motor vehicle parts, usually via spraying techniques, teach a composition that provides desired smoothness and finish, applicable to basecoats and clear coats, where the examples of waterborne compositions on col. 9-10, have solid contents ranging from 29.3 wt% to 30.8 wt %. It would have been obvious for one of ordinary skill in the art to employ coating compositions such as those of Poole et al in the process of the primary references, because they are suggested to be used in such end uses, with teaching that they are curable by heat or air drying, where flashing is employed, all of which are used by the "...Heated Flash OFF.." teachings.

10) Other art of interest (cited in IDS), are noted to include the Nelson et al patents and Bergman et al (4,771,728), which use IR lamps with power densities of 30-150 W/in<sup>2</sup> (i.e. about 40-232 KW/m<sup>2</sup>); Hyde (4,535,548) with IR lamps using 60-160 W/in<sup>2</sup> to dry substrates and Lemaire et al (4,594,266) employing IR wavelengths of less than 2μm at about 100 KW/m<sup>2</sup> at the support, all greater than claimed power densities.

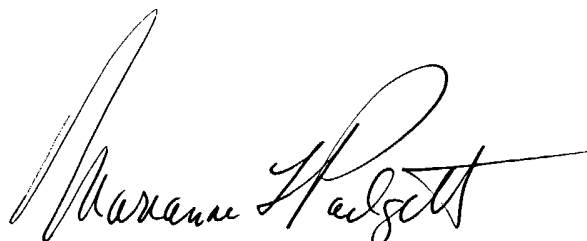
11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beck Shrive can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Padgett/LR  
September 16, 2004  
October 6-7, 2004



**MARIANNE PADGETT**  
**PRIMARY EXAMINER**